



Chapter 10

**Internal Audit of Internet-Based
Electronic Commerce
Transactions: A TQM Approach**

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The introduction of Internet-based electronic commerce (EC) has brought new risks to internal controls. Increased interdependencies among various parties in an EC transaction shifting organizational focus from an audit-risk to a business-risk exposure. This chapter addresses the nature of EC transactions and control considerations associated with them. The chapter also provides internal auditors with a Total Quality Management (TQM) framework for services performed within EC environment. The framework is developed and based on five principles: activity analysis, control analysis, evaluation analysis, risk assessment, and continuous improvement. This approach provides appropriate continuous monitoring of business practices and internal controls to ensure audit effectiveness and efficiency.

INTRODUCTION

The business world is changing rapidly with the introduction of the Internet. The Internet has allowed businesses to change their processes and implement new services to maintain their competitiveness. The Internet-based EC transactions involve individuals as well as organizations engaging in a variety of electronic busi-

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ness transactions in a virtual setting. EC involves transactions between or among parties, from different parts of a country or the world, engaging in a variety of electronic business transactions without paper documents using the Internet as a viable transport mechanism for business information. Without adequate internal control procedures, EC transactions may be easily changed, lost, duplicated, and incorrectly processed.

The Internet also has implications for the internal audit function. It has changed the environment within which the rules for security, reliability, and allowable margin of error were formed. It is shifting organization focus from an audit-risk to a business-risk exposure because of interconnected business setting. The business internal control framework must fully integrate controls within and outside an organization. Thus, business processes or operational controls must integrate with technical controls so as to assure reliable and recoverable systems and networks. The EC environment requires sophisticated audit techniques and procedures that incorporate more timely operation and response. This shift towards increased reliance on continuous control and monitoring is the trend in many organizations today (Helms and Mancino, 1999). Organizations should have appropriate internal controls for its EC transactions and the internal auditors need to adopt an integrated auditing approach in the evaluation and audit of the new EC risks (Glover and Romney, 1998).

This chapter provides the internal auditor with a TQM framework for the audit of EC transactions. The thesis of this chapter is that the Internet-based EC transactions introduce additional and unfamiliar set of risks to the business setting, which can be minimized through a TQM framework that enhances the internal audit effectiveness and efficiency. First, the paper defines the objectives of internal control and the components of the internal control system. Next, the characteristics of the EC environment are discussed and analyzed as the basis for guidance to the development of internal control procedures. Finally, a TQM framework for EC transactions is presented.

INTERNAL CONTROL OBJECTIVES

The Committee of Sponsoring Organizations (COSO) put forth a definition of internal control in its 1992 report (*Internal Control-Integrated Framework*) to represent a consensus viewpoint as (Moeller and Witt, 1999):

A process, effected by an entity's board of directors, management, and other personnel designed to provide reasonable assurance regarding the achievement of objectives in the following categories:

1. Effectiveness and efficiency of operations.
2. Reliability of financial reporting.

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